

I certainly cannot regard all the subfamilies admitted by Theobald in the "Genera Insectorum" as of subfamily rank. The *Culicidae* suffer, in my thinking, from the usual tendency prevailing amongst specialists who limit their studies to a single family, and often have a very slight knowledge of the rest of the animal kingdom. This is to very much overrate the comparative value of the various distinctive characters.

Thus two or three allied genera get split off into a subfamily, whilst genera, subgenera and species are created *ad infinitum*, on the slenderest and often inconstant characters. In support of the expressed opinion in my Catalogue, that many of the new species could not hold specific rank, may be noted a tendency now to speak of "Culex so-and-so and its allies," which is a very convenient way of intimating the vagueness of the specific limitations.—E. BRUNETTI, Calcutta, India, January, 1909.

P.S.—Perhaps it may not be out of place here to incidentally record my complete agreement with Prof. Aldrich's views as to the inadvisability of overturning so many of Meigen's later (1803) generic names for those first (1800) adopted by him and subsequently discarded, and I regret much to see one or two of our leading European Dipterologists accepting the changed nomenclature.

### THREE NEW SPECIES OF THE GENUS *BDELLA* (MITES).

BY H. E. EWING, URBANA, ILL.

The genus *Bdella* is by far the richest in species of any of the genera of the family *BDELLIDÆ*, the members of which are especially characterized by their large beak, and frequently have their palpi geniculate. The members of this family of mites are predaceous, using their powerful chelate mandibles for attacking their prey. Up to the present time only ten species of this genus have been recorded from the United States, this paper bringing the number up to thirteen known to our country.

#### KEY TO SPECIES DESCRIBED.

1. Segment 3 and 4 of palpus subequal . . . . . *B. corticis*.  
Segment 3 much stouter than 4 . . . . . 2.
2. Distal segment of palpus over twice as long as segment 4 . . . *B. muscorum*.  
Distal segment of palpus scarcely one and one-half times as long as  
segment 4 . . . . . *B. depressa*.

*Bdella corticis*, n. sp. (Plate vi, figs. 1, 2, 3).—Colour yellowish-green, with blotches of black.

April, 1909



NEW SPECIES OF BDELLA (MITES).

Cephalothorax as broad as long ; beak three-fourths as long as leg 1 ; each mandible bears dorsally two rather prominent bristles, a large bristle situated at about one-third the distance from the anterior to the posterior end of the mandible, and a similar bristle at about an equal distance from the base of the same. Palpi surpassing the mandibles ; second segment almost equal to the mandibles in length ; third and fourth segments subequal in length, but the third slightly stouter than the fourth ; distal segment equal to the fourth in length, but about twice as broad at the distal end as at the proximal end. Second segment with three or four moderate bristles ; third with a single bristle ; fourth with two subequal bristles on the outer margin, each about as long as the width of the segment itself ; distal segment with six bristles, two very large tactile ones at the end of the segment, the outer about as long as the palpus itself, the inner about three-fourths as long ; between the two large tactile bristles are situated two small bristles, the outer about as long as the segment itself, the inner about two-thirds as long ; one situated laterally, about as long as the segment itself, one situated dorsally near the base. A single pair of eyes is present at the postero-lateral border of cephalothorax.

Abdomen about three-fifths as broad as long, broadest at the anterior end ; two rather prominent, straight, posterior bristles situated on the posterior margin near the median plane ; a pair of small shoulder bristles also present.

Legs large ; posterior pair longest ; anterior pair about one and one-half times as long as the beak, and each succeeding pair slightly longer than the pair preceding it. Claws and caroncle of legs small. Tarsus of leg 1 longer than tibia.

Length, 0.70 mm.; breadth, 0.52 mm.

Under bark of cottonwood. Collected by the writer at Urbana, Ill.

*Bdella muscorum*, n. sp. (Platevi, figs 4, 5, 6).—Red, body somewhat darker than the legs and palpi.

Cephalothorax large, lateral margins convex. Beak about as long as the cephalothorax. Mandibles each with a prominent curved bristle near the middle of the dorsal surface, and a smaller bristle near the base. Palpi slightly surpassing the beak ; second segment fully two-thirds as long as the mandibles ; third segment shorter but stouter than the fourth ; distal segment about one-half as long as segment two, but stouter, being enlarged at its distal end. Segment two of palpus bearing a short bristle on its

inner margin near the base, and three or four short bristles on its outer margin; segment four with a superior and a lateral bristle; distal segment with two very large terminal bristles, the outer of which is the longest, being equal to the total length of the palpus, the inner being about three-fourths as long, three other bristles on the distal segment, two on the outer margin near the distal end, and one near the inner margin about one-third the distance from the distal to the proximal end. Two pairs of eyes present, situated close together at the postero-lateral aspect of the cephalothorax.

Abdomen about one-half as broad as long, with a pair of small shoulder bristles and two pairs of subequal posterior marginal bristles.

Anterior pair of legs about one and one-half times as long as the beak. The two posterior pairs of legs are longer than the two anterior pairs of legs. Tarsus of leg 1 one and one-half times as long as the tibia; claws and caroncle of tarsus stout.

Length, 0.85 mm.; breadth, 0.60 mm.

In moss. Collected by the writer at Muncie, Ill.

*Bdella depressa*, n.sp. (Plate vi, fig. 7).--Cephalothorax, not including the beak, about one-half as long as the abdomen; beak two-thirds as long as the abdomen. Palpi surpassing the beak; segment two almost as long as the beak; segment three twice as long and almost twice as thick as segment four; distal segment equal to segment three in length, but only as broad as segment three at its distal end, which is much broader than the proximal end. Distal tactile bristles of the end segment almost equal, being about as long as the total length of the palpus. A double pair of eyes present; situated at the postero-lateral aspect of the dorsal surface of cephalothorax about their width from the cephalothoracic abdominal suture.

Abdomen twice as long as high; very sparsely clothed with simple, stiff, short bristles, which are slightly longer towards the posterior margin.

Anterior pair of legs as long as abdomen; tarsus of leg 1 longer than the tibia; claws and caroncle stout, situated on a pedicel as long as the thickness of the tarsus. Legs clothed with simple bristles, which are longer towards the distal end of the leg.

Length, 0.70 mm.; breadth, 0.50 mm.

Under bark. Collected by the writer at Arcola, Ill.

## EXPLANATION OF PLATE 5.

Fig. 1.—*Bdella corticis*, n. sp., left palpus, x 108.

“ 2.— “ “ right mandible from above, x 240.

Fig. 3.—*Bdella corticis*, tip of tarsus of leg 1 with ambulacra; from the inside and below, x 500.

Fig. 4.—*Bdella muscorum*, n. sp., left palpus, x 160.

“ 5.— “ “ right mandible, x 140.

“ 6.— “ “ tarsus of leg 1, x 160.

“ 7.—*Bdella depressa*, n. sp., right palpus, x 240.

NOTES ON SOME HEMIPTERA TAKEN IN THE BERMUDAS  
BY W. J. PALMER.

BY E. P. VAN DUZEE, BUFFALO, N. Y.

I am indebted to Mr. W. J. Palmer, of Buffalo, N. Y., for a small but very interesting collection of Hemiptera taken by him on the Bermuda Islands on December 9th, 1908. He was on the islands but two or three days, and had very little time for scientific work, but he was able to secure 120 specimens representing seventeen species. A very good showing, considering the season and the limited fauna of these islands. Prof. Verrill, in his "Bermuda Islands," published in 1903, lists all the species known to him to have been recorded as taken in these islands up to that time. Excluding the plant lice, he enumerates 20 species, to which must be added one, *Tinobregmus vittatus*, Van Duzee, recorded by Prof. Herbert Osborn, but overlooked by Prof. Verrill, and possibly the *Cicada* recorded by Dr. Uhler as *tibicen*, but perhaps considered identical with *Bermudianus* by Prof. Verrill. To these must now be added twelve of the species recorded below as taken by Mr. Palmer, making a total of thirty-four species now known from these islands. The identity of a few of those quoted by Prof. Verrill is doubtful. The *Lygus* he figures at plate 99, fig. 17, may be *Lygus apicalis*, var. *prasinus*, Reut. The *Rhaphigaster cydnus* recorded by J. M. Jones is unknown to me, and may represent merely a clerical error. The *Nabis* reported by Dr. Dahl may very likely be the *Reduviolus capsiformis* taken by Mr. Palmer. These identifications may reduce the total number of recorded forms to 30 or 31.

It is a somewhat remarkable fact that all the species taken by Mr. Palmer, and most of those recorded by Prof. Verrill, have also been taken in Florida. If this holds true for all the insect fauna of these islands, as it is very likely to do, we must look for the origin of this fauna to the